

REMARKS

Entry of this Amendment in accordance with the provisions of 37 C.F.R. § 1.114 is respectfully requested. This amendment is in response to the Final Office Action dated July 25, 2003. By the present amendment, withdrawn claims 5, 6, 12, 13 and 19-28 have been cancelled, without prejudice to the Applicants' right to file a Divisional application directed to the subject matter of these claims. Also by the presentment amendment, the independent claims 1, 7, 14, 30 and 32 have been amended to clarify the features of the invention.

Reconsideration and allowance of claims 1-4, 7-11 and 30-33 over the cited references to Hartner (WO 9815013A1) in view of Okudaira (USP 5418388) is respectfully requested. By the present amendment, the independent claims 1, 7, 30 and 32 have each been amended to define that the thicknesses of the diffusion barrier film and the reaction barrier film (or, in the case of claims 30 and 32, the means for preventing a reaction) are substantially the same thicknesses. This can be seen, for example, in the various figures showing embodiments of the invention, such as Fig. 1. More specifically, as shown in Fig. 1, the diffusion barrier 51 is substantially the same thickness as the reaction barrier film 43. This substantially equal thickness can be appreciated, for example, from the manufacturing steps shown in Figs. 4-6. As noted in Fig. 4, an opening is provided in the reaction barrier film 43 above the plugs 42. This opening in the reaction barrier film 43 above the plugs 42 is filled with the diffusion barrier layer 51. As can be seen in Fig. 5, the thickness of the diffusion barrier 51 is substantially equal to the thickness of the diffusion barrier layer 43. This substantially equal thickness can be further

appreciated from Fig. 6 which shows the layer 61 being formed to be substantially flat over the upper surfaces of the diffusion barrier 51 and the reaction barrier 43.

It is respectfully submitted that these features added to each of the independent claims 1, 7, 30 and 32 serve to clearly distinguish over the combination of references, including Hartner and Okudaira relied on in the Office Action. Specifically, in the primary reference to Hartner, the layer 3 being read as the diffusion barrier layer in the Office Action and the layer 4, identified as an insulating layer in the Office Action, clearly have different thicknesses from one another. In particular, as can be seen from Fig. 2, for example, the layer 3 serving as the diffusion barrier is substantially thicker than the layer 4. This difference in thickness comes about due to manufacturing differences, and leads to a different structure in Hartner. Nothing in the cited secondary reference to Okudaira teaches or suggests the modifications that would be necessary to arrive at the claim structure with substantially equal thickness between the diffusion barrier layer and the reaction barrier layer. Indeed, the adhesion layer 11 of Okudaira is quite clearly substantially thicker than the diffusion layer 13 of Okudaira. Therefore, there is nothing to motivate one of ordinary skill in the art to modify the formation techniques in Hartner to arrive at the substantially equal thicknesses called for in the present claims, in addition to the other claim features, from the Hartner reference. The sole basis for such a modification is Applicants' own teaching. As noted in the cases of *In re Lee* 61 USPQ 2d 1430, *Ex parte Gerlach*, 212 USPQ 471, *In re Fine*, 5 USPQ 2d 1596 (CAFC 1988) and *In re Antonie*, 195 USPQ 6, the motivation for making a modification cannot be the Applicants' own disclosure. Therefore, reconsideration and allowance of these amended claims is respectfully requested.

Reconsideration and allowance of amended claim 14 over the combination of Hartner and Okudaira is also respectfully requested. Claim 14 defines that the plug (e.g. such as the plug shown in Figs. 19-21) serve to function both as a diffusion barrier layer and a conductive plug for contacting a capacitor electrode. More specifically, claim 14 has been amended to define that the first electrode is electrically connected to the diffusion barrier layer and, in addition, in contact with the top surface of the insulating film. This is specified in conjunction with the reaction barrier film being provided in self alignment with the first electrode. In addition, claim 14 now specifies:

“wherein said reaction barrier film is located outside of said first electrode and does not extend under said first electrode.”

This structure can clearly be appreciated from Figs. 19-21 of the drawings. These features are completely lacking from any of the cited art references, including the references to Hartner and Okudaira relied upon in rejecting these claims. As such, it is respectfully urged that claims 14-18 also clearly define over the cited prior art of record, and such action is earnestly solicited

If the Examiner believes that there are any other points which may be clarified or otherwise disposed of either by telephone discussion or by personal interview, the Examiner is invited to contact Applicants' undersigned attorney at the number indicated below.

To the extent necessary, Applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to the Deposit Account No. 01-2135

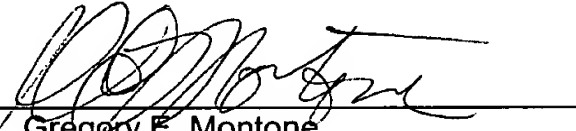
Application No.: 09/391,250

Docket No.: 520.37546X00

(Docket No. 520.37546X00), and please credit any excess fees to such Deposit Account.

Respectfully submitted,

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